Sustainable Audits for Industrial Water Users

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Introduction

- What is Sustainability?
- What is a Sustainable Business?
- How can a Traditional Water Audit help you become more sustainable?

Sustainability: Definitions

- A sustainable business addresses the problems of tomorrow today.*
- A sustainable business is more efficient in its use of all resources.
- A sustainable business is more efficient and therefore is more competitive in a global market place.

* Jeffrey Immelt, CEO of GE with the start of their ecomagination campaign last year.

Purpose of Presentation

To demonstrate how a traditional water audit can be augmented with -

- **new cost information,** and
- **new metrics**

to help make a business more sustainable.

A Traditional Water Audit

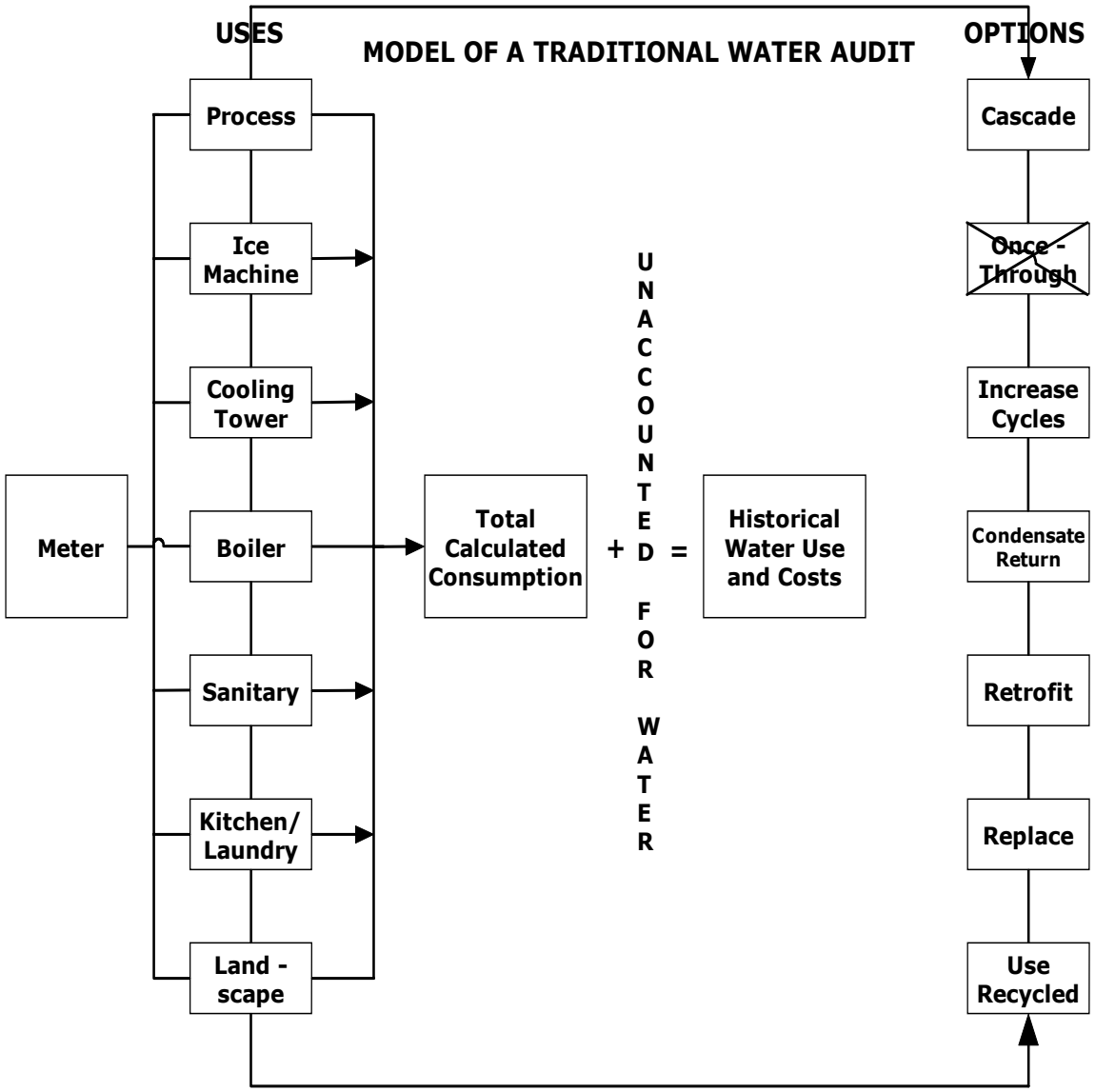
- Start with facility manager or plant engineer
- Check out water meter and data collection, and assign water manager if necessary

Consumption	Read Meters
<1 MG/yr	Monthly
1-7.5 MG/yr	Weekly
> 7.5 MG/yr	Daily

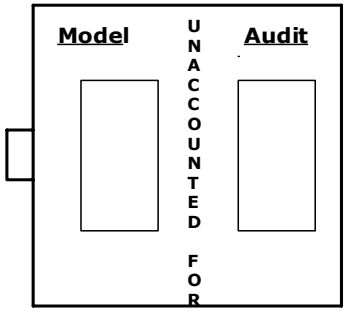
- Inventory ‘all’ Water Uses
- Measure or estimate flow rates and then gallons/year for each at **1 cubic foot = 7.48 gallons and 100 cubic feet (ccf or hcf) = 748 gallons**

A Traditional Water Audit

- Prepare Water Balance: **Total of inventory water uses + unaccounted-for-water = metered water consumption**
- Check for leaks when unaccounted-for-water is > 10% of metered water
- Collect costs for water and sewer service from 2 or more years of bills
- Determine options for more efficient water use, and
- Put together an Action Plan for implementation of most cost effective options.


USES
MODEL OF A TRADITIONAL WATER AUDIT
OPTIONS
Process
Ice Machine
Cooling Tower
Boiler
Sanitary
Kitchen/ Laundry
Land - scape
Meter
Total Calculated Consumption
+ UNACCOUNTED FOR WATER =
Historical Water Use and Costs
Cascade
Once - Through
Increase Cycles
Condensate Return
Retrofit
Replace
Use Recycled

A NEW BUSINESS MODEL OF SUSTAINABLE WATER USE



UP FRONT ACTIONS

Identify a corporate 'champion' to help organize efforts.

Set up an intranet to tell everyone about the 'new company water audit.'

Organize committee of 'first responders' to water issues and define mission statement.

Show historical water use and ask for suggestions on increased efficiency.

Begin cost analysis of all possible efficiency options.

Show all data for efficiency options on intranet.

MID-TERM ACTIONS

Consider water quality as 'high, potable, or non-potable' and establish true costs.

Identify and add all energy costs associated with water.

Check that all costs related to wastewater with pre-treatment and disposal are included.

Check that all costs related to water and wastewater regulations and permits are included.

Tally all energy, wastewater, regulatory and other costs to generate 'true cost' of using water.

BACK END ACTIONS

Re-evaluate cost/benefits of all efficiency options using new 'true' costs.

Review locations of possible leaks if applicable.

Select and rank efficiency options as part of a new corporate-wide action plan.

Develop metrics that define the true $ cost of water per ccf or 1000 gallons.

Develop metrics that define the true $ cost of water per widget or other activity to compare with other costs of production. Show on intranet.

Add impacts for new products and/or services in pipeline to intranet.

Your Business and Your Community

- Your source(s) of water and discharge points
- Your community's present - and future - water and sewer issues
- Do your needs for water sources and discharge points match your community's future ability to provide them?
- Put your new sustainable water use program on your website, and
- Participate in your community's planning process for water, sewer and related issues!

Conclusions

- A sustainable business is efficient and competitive in a global marketplace
- A traditional water audit is a good start in identifying efficient water practices
- A sustainable water audit can make you both efficient and competitive in your local market and help make you competitive in a global market place.

Questions ??

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